Math103 Intermediate Algebra – Arrowsmith – PreTest 4

Name_____

Each of the 18 questions is worth 5 points plus 1 points for each of 10 homework problems for a total of 100

Simplify the root.

1) $\sqrt[3]{x^{27}}$

Simplify by first converting to rational exponents. Assume that all variables represent positive real numbers.

2) $\sqrt[4]{100s^{18}}$

Use the rules of exponents to simplify the expression. Write the answer with positive exponents. Assume that all variables represent positive real numbers.

3) $\dfrac{x^{1/2}}{x^{5/4} \cdot x^{-3}}$

Express the radical in simplified form.

4) $\sqrt[3]{864}$

Express the radical in simplified form. Assume that all variables represent positive real numbers.

5) $\sqrt[3]{\dfrac{y^{10}}{125}}$

Simplify. Assume that all variables represent positive real numbers.

6) $4\sqrt{7} + 5\sqrt{63}$

7) $9\sqrt[3]{m^7p^5} - 7m^2p\sqrt[3]{mp^2}$

Multiply, then simplify the product. Assume that all variables represent positive real numbers.

8) $(3 - 5\sqrt{2})^2$

Rationalize the denominator. Assume that all variables represent positive real numbers and that the denominator is not zero.

9) $\dfrac{\sqrt{7}}{7\sqrt{3} - \sqrt{7}}$

Solve the equation.

10) $\sqrt{2k + 1} = 13$

Solve this equation.

11) $\sqrt{3x + 10} = 5 - 2x$

Multiply or divide as indicated.

12) $\dfrac{\sqrt{-144}}{\sqrt{-4}}$

Add or subtract as indicated. Write your answer in the form a + bi.

13) $[(4 + 6i) - (10 + 7i)] - (5 - 6i)$

Use the quadratic formula to solve the equation. (All solutions are real numbers.)

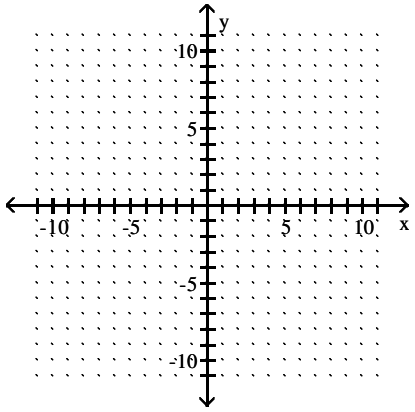
14) $x^2 = 3 - 4x$

Use the quadratic formula to solve the equation.

15) $x^2 - \dfrac{2}{5}x = -\dfrac{7}{10}$

Sketch the graph of the parabola.

16) $y = (x - 3)^2 - 2$



Identify the vertex of the given parabola.

17) $f(x) = (x + 2)^2 + 9$

Sketch the graph of the parabola.

18) $y = x^2 - 2$